

# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** **FM17US0267X**

3. **Equipment:** Mononivo MN4  
**(Type Reference and Name)** Level Detector

4. **Name of Listing Company:** UWT GmbH

5. **Address of Listing Company:** Westendstrasse 5  
D-87488 Betzigau  
Germany

6. The examination and test results are recorded in confidential report number:

3059552 dated 19<sup>th</sup> October 2017

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3616:2011,  
ANSI/ISA 61010-1:2012, ANSI/NEMA 250:2003, ANSI/IEC 60529:2004

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. **Equipment Ratings:**

Suitable for use in ordinary (unclassified) locations, indoors and outdoors (Type 4X, IP67).

Dust-ignitionproof for Class II, Division 1, Groups E, F and G; Class III, Division 1 with a T4A temperature class for use in hazardous (classified) locations, indoors and outdoors (Type 4X, IP67) with an ambient temperature rating of -40°C to +60°C.

**Certificate issued by:**

  
\_\_\_\_\_  
J.E. Marquedant  
VP, Manager, Electrical Systems

6 April 2018

\_\_\_\_\_  
Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

**THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE**

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: [information@fmapprovals.com](mailto:information@fmapprovals.com) [www.fmapprovals.com](http://www.fmapprovals.com)

# SCHEDULE



US Certificate Of Conformity No: FM17US0267X

11. The marking of the equipment shall include:

For Ordinary (Unclassified) Locations

Type 4X, IP67

For Hazardous (Classified) Locations

Class II, Division 1, Groups E, F, G, Class III, Division 1; T4A Ta = -40°C to +60°C; Type 4X, IP67

12. **Description of Equipment:**

**General** - The two vibrating concentric arranged rods are actuated to mechanical oscillation by an actuating piezo-crystal. Another piezo-crystal converts the mechanical oscillations into an electrical signal, which is electronically amplified and applied to the actuating piezo-crystal. Nevertheless only the outer rod is viewable and in contact with the bulk material. If the vibrating rod is not covered by the filling material, it can vibrate freely. If the filling material covers the vibrating rod, it becomes damped in its oscillation. The oscillation is electronically analyzed and converted into an electrical output signal.

**Construction** - The enclosure is made from Aluminum with two 1/2" NPT or M20 x 1.5 Metric Cable entries. The MN 4020 and MN4030 process connection is made from stainless steel. The process connection is connected to the probe (oscillation rod) by an extension shaft all constructed from stainless steel. To allow the end user installation flexibility the MN4040 is constructed in the same manner however the Extension tube is constructed using Industry Electrical conduit.

**Ratings** - The Maximum ambient operating temperature range of the Mononivo MN4 is -40°C to 60°C. Process temperature range is -40°C to 150°C.

The Mononivo MN4 has the following electrical ratings:

For the Universal Voltage Relay DPDT of 21V...230VAC 50/60Hz +/-10% and 22V...45VDC +/-10%. With a max installed load/input current of 22VA/ 2W

Signal Output: by Floating Relay DPDT-AC Max 250V 8A non-inductive or DC max 30V, 5A non-inductive

For the Three (3) Wire PNP of 20V...40VDC +/-10% with a max Installed Load / Input current of 0.5A

Signal output: Open collector- Permanent load max. 0.4A

For Ordinary (Unclassified) Locations

**MN40a0 abcd3efghi. Mononivo Level Detector**

a = Model: A= MN 4020, B=MN 4030, C=MN 4040

b = Certification: M, K or 1

c = Temperature extended shaft: 1, or 2

d = Electronic module: L or D

e = Process connection: \* according to Drawing 002-05 through Drawing 002-06.

f = Length of Extension: 1, Z, or \*

g = Material of process connection / Extension "L": (according to Drawing 002-05 through Drawing 002-06)

h = Options that are not Approval relevant.

i = Cable Entry: NPT (1/2 inch) or Metric (M20x1.5).

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# SCHEDULE



US Certificate Of Conformity No: FM17US0267X

## For Hazardous (Classified) Locations

### **MN40a0 abcd3efghi. Mononivo Level Detector**

a = Model: A= MN 4020, B=MN 4030, C=MN 4040

b = Certification: N, F, or L

c = Temperature extended shaft: 1, or 2

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e = Process connection: \* according to Drawing 002-05 through Drawing 002-06.

f = Length of Extension: 1, Z, or \*

g = Material of process connection / Extension "L": (according to Drawing 002-05 through Drawing 002-06)

h = Options that are not Approval relevant.

i = Cable Entry: NPT (1/2 inch) or Metric (M20x1.5).

## **12 Specific Conditions of Use:**

*Model MN4040 Extension tube is constructed using Industry Electrical conduit installed by qualified personnel per equipment manual and NFPA 70 National Electrical Code (FM Approved Unit).*

## **13 Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

## **14 Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

## **15 Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
19 <sup>th</sup> October 2017	Original Issue.
6 <sup>th</sup> April 2018	<u>Supplement 1:</u> Report Reference: – RR213171 dated 6 <sup>th</sup> April 2018. Description of the Change: Addition of Metric (M20 x 1.5) thread option for cable entry, removed threaded adapters, and revised PNP voltage range from 18-50Vdc to 20-40Vdc. Updated FM 3600 standard date.

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